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Materiality and Traditional Sustainability: Slow Food and the case of Building Lime in Architecture

The Slow Food movement founded by Carlo Petrini in 1989 brought to light the clear and present disaster in the art of gastronomy caused by the industrialization of farming practices. By severing the connection between the source of food and its end use in the kitchen, the true meaning of sustainability as it was understood in gastronomy was lost. The words *sustenance* and *sustainability* both share etymological connections to the ideas of *endurance* and *nourishment*, meaning that Slow Food sees sustainability as both an *environmental ethics* and (importantly) as *tasting good*.

This paper contends that the Slow Food model has the capacity to broaden the creative scope and definition of sustainability in architecture that I propose currently suffers from an inward looking gaze focused on quantifiable efficiencies and on technological solutions to the ‘problems’ of architecture.

1. Slow Food: Conservation of Taste or ‘Disney World’ of Food

The Slow Food movement educated the public about the perils of lost regional biodiversity and its impact on culture and identity. Farmers spent thousands of years practicing seed selection to find the best-suited type of plant for a particular area while simultaneously incorporating local flavors and tastes into their dishes. A Slow Food

system is a naturally and locally sustainable system that creates cultural identity and regional distinction woven with the environmental and cultural conditions, restrictions and oddities of an area. As Petrini asks, “does the *pepperonata* of Piedmont taste the same made with peppers grown in Holland?” The answer is no (but the peppers are cheaper). With the loss of traditional produce varieties goes the knowledge of how to cook local dishes as well as their incredible nutritional value. The tacit knowledge embedded in the craft of cooking with certain local varieties of produce has disappeared in just a few generations.

The Slow Food movement has taken an approach that straddles conservation and adaptive means. Their mandate is to preserve biodiversity and local farming practices and also regional cuisine through local sustainable small-scale production. They state:

Our mission: Slow Food works to defend biodiversity in our food supply, spread taste education and connect producers of excellent foods with co-producers through events and initiatives.¹

Critics of the Slow Food movement contend that the movement presents unsolvable tensions between an elitist manifesto and the democratizing ideal of affordable but tasty regional restaurants.² The benefits of mass production must indeed be recognized for its success in bringing affordable products to the masses for survival. The question remains, does the notion of reviving traditional practices simply create a theatre of “peasant” foods for elitists to consume? Or can it substantially contribute to a resistance against the

declining quality of food across the globe – while at the same time regenerating the spectrum of *taste* in the process. If so, what does this contribute to society as a whole and how can it re-inform our concept of sustainability?

In Slow Food, there are two main streams of *action* undertaken by the organization; the building up of a library of ‘endangered’ tastes in a program called “The Ark of Taste” and the stabilization of production techniques and economic viability of these foods in a program called “Precidia”.

The Slow Food website defines *The Ark of Taste* as a program “to rediscover, catalog, describe and publicize forgotten flavors. It is a metaphorical recipient of excellent gastronomic products that are threatened by industrial standardization, hygiene laws, the regulations of large-scale distribution and environmental damage.”³ In a sense, this project is an act of pure preservation, saving vestiges of taste from demolition or decay.

The *Precidia* is the working arm of the Ark of Taste, it “work(s) in different ways, but the goals remain constant: to promote artisan products; to stabilize production techniques; to establish stringent production standards and, above all, to guarantee a viable future for traditional foods.”⁴ Similar to the Ark of Taste, the Precidia can also be seen as a strategy for preservation, but with an important difference, the Precidia aims to integrate the ‘artifact’ back into the current economic *and* cultural context so it can survive. This *integration* is key. Without Precidia, Slow Foods in the Ark of Taste would be the

architectural equivalent of a Disney World castle – an image of an artifact for consumer consumption, or a souvenir of times gone by.

2. Was Lime on the “Ark”?

Burnt lime has been used as a building material since the early Egyptian buildings with surviving intact examples dating back to 2000BC and evidence of non-building use going much further back including masks from 4400BC and earlier. Ancient Greece saw the further development of the use of burnt lime in buildings using it as a fine lime stucco on their buildings (even if they were built of marble) such as the temples at Mycenae in Homer. The most authoritative early text on the matter of limes in building construction is the architectural treatise, *De architectura* (circa 15BC) by the Roman architect and engineer, Vitruvius. In Book II and Book VII he dedicates considerable space to describing the versatile and prevalent presence of limes. From use as a cement using various types of quarried sand, to proportions for mixing, details of binding and weaving lath, to waterproofing, admixtures, finishes and frescoes, and even as mirrors – lime finds its way into each layer and process of all building types.

“The process of “lime-burning”, the first step in making lime for architectural use is carried out in several ways. Whether done in the simplest manner, or in kilns constructed on the most scientific principles, it will still depend (both as regards the quality and quantity of lime produced) upon the *kilnsman*. It is only by constant observation from day to day that the kilnsman becomes capable of judging whether the proper temperature has been reached or that a correct opinion can be formed as to the effects produced by the

various disturbing causes which exert an important influence upon the working of a kiln, such as its size, shape, the quality of fuel, and the state of the atmosphere.”⁵

3. Artifice replaces Artifact

In 1824, Joseph Aspdin invented a product he called ‘Portland cement’ due to its similarity to Portland Stone from Dorset in England. Aspdin’s cement is the first ‘artificial’ cement in that it is composed of materials from different sources to reach the ‘clay’ and ‘limestone’ mix he wanted.

For several years, lime plasters and mortars remained in the vocabulary of builders alongside “artificial” Portland cements. But Aspdin’s invention would begin to turn the tables. With the advent of industrial burning technologies and the refinement of ‘artificial’ cements that required none of the ‘art’ of burning limes, industry could follow a simple repeatable recipe in a mechanized and controlled way. By the 1970’s, Portland Cement had virtually replaced all uses of lime mortars and cements throughout North America and much of Europe.

4. Current Technological Model for Sustainability

Current discourse on sustainability invests ‘measurable performance’ with the weight of authority. This stance is understandable in light of the objective to reduce the environmental impact, which is measured in terms of green-house gas emissions and carbon footprint.

To best ‘measure’ performance for buildings, a baseline (typical) model of a particular building type is created and architects together with engineers and the buildings team, must outperform the baseline model in ‘measurable ways’. This strategy of competition (against the baseline project) sets apart the winners, who in the LEED rating system achieve Platinum, Gold, Silver and Certification status of their buildings as determined by a third-party non-partisan review agency⁶.

Acquisition of the skills for designing a sustainable building via the LEED rating system is similar to the Suzuki Method for teaching the violin described by Richard Sennett, in *The Craftsman*. To allow quicker success for children in learning to play the violin, Suzuki applied colored tape across the fingerboard so tone recognition could be attained quickly. While early success in hearing a song could be achieved by children by placing their fingers on the matching colored tape, the method is criticized as promoting rote learning as opposed to truly understanding music. Sennett describes the acute disorientation felt by children when the tape is removed from their violin. If a LEED checklist is our introduction to sustainable design (as it is for many) a similar lack of knowledge and disorientation will inevitably follow.

5. Slow Food as a Model for Sustainable Architectural Taste

As an analogous model for architectural sustainability, Slow Food offers many interesting possibilities. I will focus on the three statements put forward as the Slow Food philosophy to spark our imagination:

1) “We believe that everyone has a fundamental right to pleasure and consequently the responsibility to protect the heritage of food, tradition and culture that make this pleasure possible. Our movement is founded upon this concept of eco-gastronomy – a recognition of the strong connections between plate and planet.”⁷

Petrini here makes a clear link between protection of the heritage of food, tradition and culture and his goal as a gastronomer – i.e. *to have pleasure*. So where, might we ask is the pleasure in sustainability? There is no doubt that we feel an ethical duty to act in an ecologically sound way, but this is not the same as pleasure.

We can say that food provides pleasure when there are ingredients available - and more importantly when there is a good cook available to apply his art! The same understanding of pleasure is not present when there are good ingredients and a cookbook on the counter (not for this bad cook anyway). It is the *chef*, or more generally the *craftsman*, who is the key to providing pleasure at both the table and in our buildings. If the craftsman is the critical vehicle between *material* and *pleasure*, then the fundamental criteria in the establishment of a pleasurable sustainability must be the survival and support of the tradesman.

In *The Craftsman*, Richard Sennett states that skill begins as a bodily process and develops within the work process. “Craftsmanship may suggest a way of life that waned with the advent of industrial society – but this is misleading. Craftsmanship names an enduring, basic human impulse, the desire to do a job well for its own sake.”⁸

As architects, we are aware of the knowledge and “bedding in” of the territory of a site or a room through sketching, drawing and redrawing. This “bedding in” of a practice takes time and repetition. While as a society we may be ready to accept that repetition is necessary, we are less open to the cost associated with time. The bodily process and technical development of a master craftsman is commonly understood to take roughly ten thousand hours to reach. Time then, is critical to the understanding, development and refinement of a single craft, and more precisely presents a difficulty for our desire to have pleasure in sustainability. “The skills society is bulldozing the career path; jobs in the old sense of random movement⁹ now prevail; people are meant to deploy a portfolio of skills rather than nurture a single ability in the course of their working histories; this succession of projects or tasks erodes belief that one is meant to do just one thing well. Craftsmanship seems particularly vulnerable to this possibility, since craftsmanship is based on slow learning and habit.”¹⁰

*2) Slow Food is **good, clean and fair** food. We believe that the food we eat should taste good; that it should be produced in a clean way that does not harm the environment, animal welfare or our health; and that food producers should receive fair compensation for their work.*

In line with the mainstream concepts of sustainability, Petrini weaves an ethical cloth between what is produced (the material), how it is produced (techniques) and by whom it is produced (the craftsman). By bringing together quantifiable elements of things being “produced in a way that does not harm the environment, animal welfare or our health”

with qualitative goals “good, clean and fair” he opens the door for a more balanced assessment of sustainability.

In this way, both qualitative and quantitative properties of materials should be discussed together in assessing the sustainability of a method or material. This will help avoid the by-products of a too sharply focused vision. We will return to lime as our subject to make an assessment of sustainability in this way.

Natural hydraulic limes consume only about one-quarter of the energy required to make cement and release much less CO₂ into the atmosphere. In turn, once lime is installed and begins to cure, it continues to absorb CO₂ (recarbonation) for the duration of its life, further reducing the net CO₂.

Lime aids in recycling in many ways; first as a mortar, it is weaker than a masonry unit (as mortars should be) so unlike Portland-based mortars, masonry units bonded with lime mortar can be easily disassembled and reused without damage over and over again.

Secondly, lime mortar itself can be recycled as aggregate for new mortars, as fertilizer (it is simply CaCO₃), water purification or as hazardous waste treatment.

With regards to improving indoor air quality, lime brings many good qualities to the table. Walls constructed of lime (as mortar and/or plaster) are called ‘breathing walls’¹¹ therefore acting as a filter for air rather than sealing the outside from the inside like modern wall systems. In addition, lime plaster is alkaline and therefore retards the

growth of mold in walls, helping keep the air in the buildings clean. A natural product, lime and does not contain any volatile organic compounds that contribute to off-gassing (leading to sick-building syndrome) in typical construction.

With proper use, new constructions in lime will have a very long life span, and therefore amortize the energy used in constructing a building over a longer period of time. Finally, lime can contribute to the duration of our historic monuments by preserving them with their existing technologies so they can continue to inspire further generations.¹²

If what we build can return to the ground or back into the same product in a closed “cradle to cradle”¹³ system, and cause no environmental damage in that cycle then we are well on our way to a good, clean and fair building.

*3) We consider ourselves **co-producers**, not consumers, because by being informed about how our food is produced and actively supporting those who produce it, we become a part of and a partner in the production process.*¹⁴

In this last point, Petrini argues for the importance of understanding ourselves as part of an *informed community* and most importantly *acting* on that knowledge.

We have seen in the case of building lime that the knowledge about the material and its processes was primarily contained in the trades. When new technology (of artificial cements) displaced the traditional techniques, it took only 150 years to lose the tacit and

tasteful knowledge of a material that had been in use well over 4000 years. In 2008, it is near to impossible to find a knowledgeable craftsman in North America who is working with building limes in construction or producing quicklime. The surviving knowledge rests in the hands of a small number of masons working primarily in the building conservation industry.

The *Precidia* will act as the bridge here – between the lone craftsman or craft, and an informed community that will act on this knowledge. If we recall, in addition to conservation of materials and techniques, the key to this initiative is that it “seeks to guarantee a viable future for traditional foods.” To guarantee any endeavor in a shifting technological economic world is a great difficulty, let alone for a craft that has been marginalized in material and in technique.

To create an informed community education is critical, but who should we be educating? The answer may rest in the ideals of Slow Food itself, which looks to the local community for integration and acceptance, and has been shown to create pride and develop local identity.

The educational community for ‘buildings’ includes schools of architecture and trades. I propose that when we bring materials into the architectural version of Petrini’s Ark, we should pay equal attention to contemporary materials and methods as we do to ‘extinct’ materials and methods. As we have shown with the case of building limes: the product answers to a longer list of sustainable (quantifiable and qualitative) questions than its

artificial counterparts, and yet it remains buried. If students of the building industry are informed, that is to say, they possess the full range of ‘ingredients’ available to them, and develop the skills necessary to become a ‘chef’, then we can consider them informed, and having the possibility to ‘act’. This is our role as educators.

6. Conclusion

I set out at the beginning of this paper to use Slow Food as model for broadening the scope of sustainability in architecture and to move it beyond a technological and quantitative definition. By looking carefully at Slow Food, I found that their definition of sustainability differed from the one used in architecture in that it saw sustainability as both an *environmental ethics* and as (importantly) *tasting good*.

To understand how architecture could “taste good” we leaned on the analogical reading of the philosophy for Slow Food. By revealing taste to be the domain of experience and knowledge, it became clear that the two central projects to Slow Food, namely the Ark of Taste and the Precidia both hinged on the survival of raw materials and the knowledge of how to ‘give them taste’ i.e. the craftsman.

The importance of ‘materials and methods’ conservation in architecture was brought to light by tracing the history of building limes, a traditionally central building material. Through 4000 years of use in global and local architectural ‘cuisine’ we found that limes could stand up to not only the rigors of quantitative ‘measuring’ but also qualitative ‘tasting’ - only to find it dead on the doorstep of an environmental movement which it

embodies, displaced by an ‘artificial’ version of itself that indeed threw out the baby with the bathwater.

Through the three central notions of the Slow Food movement, a clear link between protection of heritage, tradition, culture and pleasure was revealed. The craftsman was found to be the *critical vehicle* between *material* and *pleasure* and so it has become clear that the fundamental criteria in the establishment of a pleasurable sustainability must be the survival and support of the tradesman. Trades take considerable time to master, and society has turned its back on this type of learning, so it will not be any easy path.

And finally, the importance of understanding ourselves as part of an *informed community* and most importantly *acting* on that knowledge should be supported by education at universities and trades schools, for all stages of the career of people involved in the building craft if we are serious about engaging sustainability in a way which touches the heart of architecture.

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¹ http://www.slowfood.com/about_us/eng/philosophy.lasso

² Jeffrey M. Pilcher, “Taco Bell, Maseca and Slow Food: A Postmodern Apocalypse for Mexico’s Peasant Cuisine?” in *Fast Food/Slow Food – the Cultural Economy of the Global Food System* ed. Richard Wilk (New York: Altamira, 2006), 69.

³ <http://www.slowfoodfoundation.org/eng/arca/lista.lasso>

⁴ <http://www.slowfoodfoundation.org/eng/presidi/lista.lasso>

⁵ Fred T. Hodgson, *Concretes, Cements, Mortars, Plasters & Stucco – How to Use and How to Prepare them* (Frederick J. Drake & Co., Chicago: 1906), 69.

⁶ The LEED (Leadership in Energy and Environmental Design) building rating system is used to represent green building practice to as it has established itself as the dominant strategy in construction and policy in North America.

⁷ http://www.slowfood.com/about_us/eng/philosophy.lasso

⁸ Richard Sennett, *The Craftsman* (New Haven, CT: Yale University Press, 2008), 9.

⁹ “In old English a “career” meant a well-laid road, whereas a “job” meant simply a lump of coal or a pile of wood that could be moved around at will” from Sennett, *The Craftsman*, 265.

¹⁰ Sennett, *The Craftsman*, 265.

¹¹ J.F. Straube and V. Acahrya. “Indoor Air Quality, Healthy Housing, and Breathing Walls.” Oikos Library. <http://oikos.com/library/breathingwalls/index.html>

¹² St.Astier Natural Hydraulic Lime, “Sustainable Construction” <http://www.limes.us/construct.html>

¹³ William McDonough and Michael Braungart, *Cradle to Cradle* (New York: North Point, 2002).

¹⁴ http://www.slowfood.com/about_us/eng/philosophy.lasso